Research Article

Effect of Infant Health Problem, Mother’s Depression and Marital Relationship on Infant Abuse in Korea: Mediating Pathway of Marital Relationship

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S U M M A R Y

Purpose: The purpose of this study is to test a model linking infant health problem, mother’s depression and marital relationship to infant abuse.

Methods: This study employed a cross-sectional survey design. Data were collected from 2009 Data of Index Studies for Korean Children and Adolescents Development. Survey data from 1,060 infants and their mothers (including infant health status and infant physical illness scale, depression scale, marital relationship scale, and child abuse scale) were used to test the model. The model was tested using path analysis techniques within structural equation modeling.

Results: The model fit indices suggested that the original hypothesized model adequately fit the data ($\chi^2 = .33$, df = 5, $p = .84$, Tucker-Lewis Index = 1.04, Comparative Fit Index = 1.00, Root Mean Square Error of Approximation = .00). Infant health problem and mother’s depression had a negative direct effect on marital relationship, which in turn had a direct negative effect on infant abuse. Infant health problems directly affected infant abuse and also influenced infant abuse indirectly through the marital relationship. Mother’s depression had significant direct effects on infant abuse and also influenced infant abuse indirectly through the marital relationship.

Conclusion: The findings from this study demonstrated the fundamental importance of infant health as linked to the mother’s mental health, and marital relationship and increasing the quality of marital relationship may be the key to infant abuse prevention.

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Introduction

Recognition of the significance of child abuse as a global public health concern and its devastating impact has increased (World Health Organization, 2002). According to the 2011 National Child Abuse Status Report (Ministry of Health and Welfare, 2012), the number of cases suspicious of child abuse was 8,325 in Korea. Of that number, preschoolers accounted for one fourth and children under 2 years old accounted for 7.8%. Due to their limited ability to express, statistical data acquired from children less than 2 years old must be considered carefully. As for the child abuse type, multiple abuses such as physical and emotional abuse and neglect accounted for 43.3% while each type of abuse; neglect, emotional abuse, physical abuse and sexual abuse accounted for 29.4%, 15.0%, 7.7% and 3.7% respectively.

The infant period is when the foundation of personality is built and physical, emotional, and cognitive growth take place. Child abuse during this period has a great influence on the life afterwards (Spence, Najman, Bor, O’Callaghan, & Williams, 2002). Children who have experienced child abuse exhibit a number of emotional disorders such as low self-esteem, social cowering, instability, obsession, depression, aggression, and social issues including attachment formation issues in personal relationships (Ahn et al., 2003). In addition, cognitive function issues such as lower academic performance are exhibited (Bae, 2010).

Factors affecting child abuse were personal factors that relate directly to the infant, such as the infant’s health and parental factors like parenting stress, depression and marital conflict. Child abuse is the result of the complex interplay of individual, relationship, social,
cultural, and environmental factors (Belsky, 1993). If children have a physical or mental disability, or poor health, the parents feel excessive responsibility for parenting, which leads to physical or mental pressure (Chung, 2009; Chung & Noh, 2010). Such pressure is displayed as an aggressive tendency in the discipline style of parents (Neil, Lee, Lee, Jane, & Paul, 2009).

Recently, due to social participation of women, the family structure and roles have been changed. As the responsibility of parents for parenting children has increased and the level of demands on the role of the mother has increased as well, mothers experience parenting stress. Parenting stress causes negative emotional responses such as depression or anxiety (Gove & Hughes, 1979). It has been reported that the higher such depression is, the higher the occurrence of physical abuse or verbal abuse becomes (Kim & Park, 2009; Lee, 2004). Causes such as health problems of children or parenting stress have negative influences on marital relationship (Moon, 2011; Neil et al., 2009). It has been pointed out that the conflict in marital relationship leads to emotional tension and displeasure which in turn lead to child abuse indirectly (Lee). More than 80% of child batterer is reported to be a parent, and home is the most vulnerable place for a child to be abused (86.6%). Although home should be the safest and optimal space for children, in reality children are at risk of being abused at home. This must be considered seriously. The incidence of abuse is 44% from a single parent family; this high rate may be due to the negative connotation of economic burden and parenting stress put on a single parent by the society (Ministry of Health & Welfare, 2012). Accordingly, rather than looking at the interaction between parent and child, the wider dynamic family relationships including marital conflict should be studied, which will lead to a better understanding of child abuse in families.

Recently, there were studies on children’s health problems and the mothers’ parenting stress (Chung, 2009; Chung & Noh, 2010; Lee & Yoo, 2007), studies on parenting, depression of the mother and child abuse (Ahn & Yi, 2002; Hong, Ahn, & Kim, 2004; Kim & Park, 2009), and studies on the relationship of marital conflict on child abuse (Doh, Kim, Kim, Choi, & Kim, 2011; Lee, 2004; Lee & Lee, 2000; Moon, 2011; Yeo, 2010). However, the study subjects are mostly school age children or teenagers (Ahn & Yi; Hong et al.; Lee; Moon), while very few studies focused on infants (Doh et al.). In addition, in previous studies, almost none examined the integrative relationship between variables influencing child abuse.

Based on the findings of previous studies, it can be predicted that child health and mother’s depression as independent variables will affect marital relationship and child abuse, while marital relationship will function as mediating variables explaining child abuse (Figure 1).

The hypotheses of this study were to determine the following: (a) an infant’s health problems have a negative effect on marital relationship; (b) a mother’s depression has a negative effect on the marital relationship; (c) an infant’s health problem has a positive effect on infant abuse; (d) a mother’s depression has a positive effect on infant abuse; (e) the marital relationship has a negative effect on infant abuse; and (f) the marital relationship functions as a mediating variable explaining child abuse.

**Purpose**

The aim of this study was to test a model linking infant health problem and their mother’s depression to their mother’s marital relationship, and ultimately to infant abuse. Based on our theoretical framework and previous research on child abuse, we predicted that infant health problem would have a direct effect on mother’s marital relationship and on infant abuse. Previous research addressing mothers’ depression and their family relationship found that mother’s depression also would have a direct effect on marital relationship and child abuse. Finally, both infant health problem and mother’s depression were expected to have an indirect effect on infant abuse through the marital relationship.

**Methods**

**Study design**

This study utilized a cross-sectional research design that investigated a model linking infant health problem and their mother’s depression to their mother’s marital relationship, and ultimately to infant abuse.

**Settings and sample**

Data was collected from the 2009 Data of Index Studies for Korean Children and Adolescent’s Development (Ministry for Health Welfare and Family Affairs & Seoul National University R &
DB Foundation, 2009). Using the method of multistage stratified sampling, 6,923 families across the nation were selected. We limited the sample included in our study to families with children between the ages of 0 and 2 years, who were cared for primarily by their mothers. Because infant abuse was based on the relationships between mothers and their children, we excluded children who were not living with a parent. The number of study participants was 1,060 families.

Ethical consideration

The approval number from the institutional review board is NamSeoul University (NSU-130520-1). According to 2009 Data of Index Studies for Korean Children and Adolescents Development (Ministry for Health Welfare and Family Affairs & Seoul National University R & DB Foundation, 2009), the purpose of the study was explained to all participants. All participants were required to hand in a signed informed consent once approval had been granted to conduct the study prior to initiating this study.

Measurements

Infant health problem

To assess infant’s health problem, measures of infant physical illness, as well as reported infant health status, were used. Infant health status, which meant general health status, was measured on the basis of responses to one item that was asked, “How healthy is your child?” Responses ranged from 1 (very strong) to 4 (very weak). Infant physical illness measures included the following: the sum of positive responses to four items asked about a doctor having given a diagnosis of developmental retardation, vision problems, hearing problems, or atopy. Responses were 0 (no) or 1 (yes). A higher score of both infant health status and infant physical illness meant greater infant health problem. Cronbach’s alpha coefficient was .74.

Maternal depression

The mother’s depressive symptoms were assessed by two scales, Korean—Beck Depression Inventory (K-BDI) and the Edinburgh Postnatal Depression Scale. The validity of Korean—Beck Depression Inventory was proven (Lee et al., 1995). Mothers were asked to report feelings consistent with their own over the past 1 week. There are a total of 10 items (e.g., “I was in a depressed mood for most of the day.”), which were based on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores directly correlated to greater depression. Cronbach’s alpha coefficient was .89.

Marital relationship

Marital satisfaction and marital conflict at home were used to measure marital relationship. There were a total of two items, which included marital satisfaction (e.g., “I am satisfied with my marriage”), and marital conflict (e.g., “I often fight with my spouse in front of the kids.”) The items were based on a 4-point Likert scale, with marital satisfaction ranging from 1 (strongly unsatisfied) to 4 (strongly satisfied), and marital conflict ranging from 1 (strongly agree) to 4 (strongly disagree). Marital conflict was reverse coded. A higher score meant a better marital relationship. Cronbach’s alpha coefficient was .72. The result of exploratory factor analysis showed that two items were loaded into one factor which explained 60.3% of the total variance.

Infant abuse

Infant abuse was measured on the basis of parental abuse and neglect at home. There are a total of 3 items, including physical abuse (e.g., “I spank my kids or hit my kids with something.”), emotional abuse (e.g., “I sometimes told my son/daughter that I would kick him/her out of my house or turn him/her away.”), and neglect (e.g., “I didn’t see a doctor even though my kids were sick.”). These items are based on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree). A higher score correlated with higher infant abuse. Cronbach’s alpha was .81. The result of exploratory factor analysis showed that three items were loaded into one factor which explained 59.1% of the total variance.

Data collection

Data were collected from the 2009 Data of Index Studies for Korean Children and Adolescents Development. Data from this nationally representative sample of children and adolescents aged 0–18 were collected by Gallup for the Ministry of Health and Welfare Statistics between September and December of 2008. Using the method of multi-stage stratified sampling, 6,923 families across the nation were selected. Face to face interviews were used with a structured questionnaire. To eliminate interviewer bias, formal training was provided to interviewers before data collection. The majority of the interviews were conducted in Korean. We limited the sample included in our study to families with children between the ages of 0 and 2 years, who were cared for primarily by their mother.

Data analysis

Data analysis was performed using SPSS (version 17.0; IBM SPSS Statistics, Chicago, IL, USA) and Analysis of Moment Structures (AMOS; IBM SPSS Statistics, Chicago, IL, USA) statistical software programs (version 17.0). Descriptive statistics for all study variables, as well as reliability assessments of study instruments, were computed. The hypothesized model in this study was analyzed using structural equation modeling techniques. All observed variables exhibited multivariate normality. Missing data were estimated using the full information maximum likelihood method, which uses all of the information of the observed data, including mean and variance for the missing portions of a variable, given the observed portion(s) of other variables (Wothke, 1998). For structural equation modeling, goodness of fit modeling, as well as the Chi-square test, were used as assessment tools. This included omnibus fit indices such as the chi-square and incremental fit indices, such as the Comparative Fit Index (CFI) and Tucker-Lewis index (TLI). The chi-square is interpreted as the test of the difference between the hypothesized model and the recently identified version of the model. Low, nonsignificant values are desired (Kline, 2005). However, the chi-square is very sensitive to sample size, thus, in a model with a relatively large sample size, the null hypothesis is expected to be rejected almost all of the time. Because of this limitation, the incremental fit indices were also used. These fit indices indicated the proportion of improvement in the hypothesized model relative to a null model, typically one assuming no correlation among observed variables. The generally agreed-upon critical value for the CFI and TLI is 0.90 or higher (Kline). In addition, the Root Mean Square Error of Approximation was used and evaluated using criteria that a low value (between 0 and .06) is indicative of a good fitting model (Hu & Bentler, 1999). In addition, this study examined the mediating effects of the marital relationship on child abuse.
Table 1 Participants Demographic Variables (N = 1,060).

<table>
<thead>
<tr>
<th>Demographics</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td></td>
</tr>
<tr>
<td>&lt; 30</td>
<td>226 (21.3)</td>
</tr>
<tr>
<td>31–40</td>
<td>736 (69.4)</td>
</tr>
<tr>
<td>41–50</td>
<td>94 (8.9)</td>
</tr>
<tr>
<td>≥ 51</td>
<td>3 (0.3)</td>
</tr>
<tr>
<td>Nonresponse</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
</tr>
<tr>
<td>Elementary school</td>
<td>21 (2.0)</td>
</tr>
<tr>
<td>Middle school</td>
<td>60 (5.7)</td>
</tr>
<tr>
<td>High school</td>
<td>505 (47.6)</td>
</tr>
<tr>
<td>College</td>
<td>461 (43.5)</td>
</tr>
<tr>
<td>Graduate school</td>
<td>13 (1.2)</td>
</tr>
<tr>
<td>Income*</td>
<td></td>
</tr>
<tr>
<td>≤ 100</td>
<td>269 (25.4)</td>
</tr>
<tr>
<td>101–199</td>
<td>186 (17.5)</td>
</tr>
<tr>
<td>200–299</td>
<td>201 (18.7)</td>
</tr>
<tr>
<td>300–399</td>
<td>196 (18.5)</td>
</tr>
<tr>
<td>≥ 400</td>
<td>110 (10.4)</td>
</tr>
<tr>
<td>Nonresponse</td>
<td>8 (0.8)</td>
</tr>
<tr>
<td>Mother’s chronic disease</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1022 (96.4)</td>
</tr>
<tr>
<td>Yes</td>
<td>37 (3.5)</td>
</tr>
<tr>
<td>Nonresponse</td>
<td>1 (0.1)</td>
</tr>
</tbody>
</table>

Note. Korean currency (10,000 won).

Results

Demographic characteristics

The demographic profile of the sample is presented in Table 1. Regarding the proportion of age, the majority of participants were 31–40 years old. Regarding the proportion of mother’s education level, most of participants were above high school graduates. The income of participants was relatively proportional. The majority of mothers did report having a chronic disease.

Descriptive statistics and correlations

Table 2 presents the means, standard deviations, and intercorrelations among major study variables. Values for means and standard deviations were calculated for each category in order to examine infant health problem (infant health status & infant physical illness), mother’s depression, marital relationship, and child abuse. Based on a 4-point Likert scale, infant health status had a mean value of 1.62 points (± 0.61); infant illness, 0.09 points (± 0.15); mother’s depression, 1.63 points (± 0.61); marital relationship, 2.71 points (± 0.98); child abuse, 1.43 points (± 0.48). Infant health status was positively associated with maternal depression (r = .15, p < .001), and infant abuse (r = .14, p < .001), but negatively associated with marital relationships (r = −.10, p < .001). Infant’s physical illness was positively associated with maternal depression (r = .13, p < .001) and infant abuse (r = .14, p < .001), but negatively associated with marital relationships (r = −.08, p < .05). Mother’s depression was positively related to infant abuse (r = .26, p < .001), but negatively related to marital relationships (r = −.28, p < .001). Marital relationship was negatively related to infant abuse (r = −.21, p < .001).

Model fitness

The fitness of the model vis-à-vis the data collected in this study was supported. Direct and indirect effects among variables were reported in Table 3. Chi-square was not significant at .33 (df = 2, p = .84). CFI was 1.00, TLI was 1.04, and the Root Mean Square Error of Approximation was .00, indicating a very good model.

Model verification results

The model for hypothesis testing was analyzed using path coefficients and squared multiple correlations (Figure 2, Table 3). (a) The first hypothesis was that infant health problems would have a negative effect on marital relationships. The path coefficient between infant health problem and marital relationship was found to be −.14 (p < .001), which supported the hypothesis. (b) The second hypothesis was that mother’s depression would have a negative effect on the marital relationship. The path coefficient between mother’s depression and marital relationship was found to be −.25 (p < .001), which supported the hypothesis. (c) The third hypothesis was that infant health problem would have a positive effect on infant abuse. The path coefficient between infant health problem and infant abuse was found to be .23 (p < .001), which supported the hypothesis. (d) The fourth hypothesis for this study was that mother’s depression would have a positive effect on infant abuse. The path coefficient between maternal depression and infant abuse was found to be .15 (p < .001), which supported the hypothesis. (e) The fifth hypothesis for this study was that marital relationship would have a negative effect on infant abuse. The path coefficient between marital relationship and infant abuse was found to be −.12 (p < .05), which supported the hypothesis. (f) Infant health problem and maternal depression directly and indirectly affected infant abuse (Table 4). Infant health problem influenced infant abuse indirectly through marital relationship (β = .02), but also directly (β = .23) as hypothesized in this model. Finally, maternal depression had an indirect effect on infant abuse indirectly through marital relationships (β = .03), and also directly (β = .15) as hypothesized in this model. The standardized direct and indirect effects are presented in Table 4 and direct effects are illustrated in Figure 2.

In terms of the overall effect, health status (β = .23) had the highest effect on infant abuse, followed by maternal depression (β = .15). Furthermore, Squared Multiple Correlation (SMC), which explains the effect of health status, maternal depression and marital relationships on infant abuse, was .13.

Discussion

This study was conducted to define the mediating effects of marital relationship in child abuse. Although previous research has examined the relationship of infant’s health problem, mother’s depression, or marital relationship in the child abuse, these variables have typically been considered separately. In the present study, these attributes were examined together in the hypothetical model.

The study results revealed the mediating impact of marital relationship between infant’s health problem and infant abuse, and between the mother’s depression and infant abuse. The result of the current study was partly consistent with that of previous studies, which underlined the importance of marital relationship for the abused child (Casanueva et al., 2010; Scannapieco & Connell-Carrick, 2005). Because during infant stage, the child was mainly dependent on the mother, most cases of substantiated child
maltreatment are perpetrated by the child’s mother (Casanueva et al.). Even if an infant has a health problem and a mother is depressed, a positive marital relationship emotionally supportive to both parents and is reassuring to the infant provides a buffer effect against infant abuse (Scannapieco & Connell-Carrick). For years, researchers have been studying both the risk factors and the protective factors among families experiencing abuse. In addition, this protective factor could moderate the effects of risk factors, thereby reducing the likelihood of child abuse (Schmaling & Jacobson, 1990). On the other hand, a negative marital relationship accompanied by domestic violence and spousal abuse has been shown to relate to child abuse (Rumm et al., 2000). A study of professional soldiers indicated that partner abuse was an important predictor of child abuse (Tajima, 2000). Interpersonal conflict between the parents seems to make a stress-filled family environment and may act as a barrier to effective parenting, eventually increasing the risk of infant abuse (Emery & Forehand, 1994). In fact, according to the research conducted by Kim (2011), 4,955 cases (87.2%) of infant abuse cases in 2009 happened in their own homes and the total number of services provided to the abused infants and their families was 37,398 times. In the categories of services provided, individual consultation or medical treatment of abused children was considerably high. Established by the Ministry of Health and Welfare in October 2001, the National Child Protection Agency (NCPA) coordinates and implements policies for the prevention of child abuse in Korea. The aim of the NCPA is to support the victims of child abuse and to inform the public of the seriousness of child abuse by establishing a cooperative system and providing policies with relative organizations. The NCPA have developed and provided various programs for abused children and their families. For the prevention of reoccurring child abuse at home and the restoration of families’ functions, psychological therapy and family counseling has been provided for abused children (NCPA, 2013).

Previous studies showed that individual therapy or group therapy for abused children, for example, art therapy, play therapy and sand play therapy and so on, was effective in formation of self-image and establishing healthy relationship with others (Shin, 2005; Sung, 2004). On the other hand, psychotherapy for a person who committed abuse or family empowerment service that can change the family and their environment was comparatively low (Chung, Chung, Son, & Kim, 2012). It was noted that there is a discrepancy between the provision of services. Thus, partner support of a depressed mother in the fulfillment of their parental role is vital, and training on specific parenting skills is needed. Actually, Ministry of Health and Welfare of Korea has paid attention to the seriousness of child abuse and made efforts to prevent child abuse caused by parents through the strengthening of education for parents. The Healthy Family Support Center of Korea provided parental program and the family empowerment program designed to help empower “at risk” families. Also preparatory parenting education program for newly married couples, which is designed to acquire the attitude and skills for making a good relationship for each other and being a good parent in the near future, has been provided (Healthy Family Support Center, 2013).

The first hypothesis was that an infant’s health problem would have a negative effect on marital relationship. The current study result was consistent with that of the previous study (Macfie, Houts, Pressel, & Cox, 2008). The family with infants at risk had associated with risk of the marital conflict and marital discord (Macfie et al.). An infant is reliant solely on the care of its parents to survive. If the infant had health problems, the stress put on the mother who takes a particularly important role in raising the infant can become unstable emotionally. This can directly affect the family and their everyday life and may lead to family dysfunction.

Table 3. Regression Weights of Research Model.

<table>
<thead>
<tr>
<th></th>
<th>Estimate (Unstandardized)</th>
<th>Estimate (Standardized)</th>
<th>SE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health status → marital relationship</td>
<td>–0.46</td>
<td>–0.14***</td>
<td>0.21</td>
<td>–2.23</td>
</tr>
<tr>
<td>Maternal depression → marital relationship</td>
<td>–0.41</td>
<td>–0.25***</td>
<td>0.06</td>
<td>–7.06</td>
</tr>
<tr>
<td>Health status → infant abuse</td>
<td>0.18</td>
<td>0.15***</td>
<td>0.03</td>
<td>4.14</td>
</tr>
<tr>
<td>Maternal depression → infant abuse</td>
<td>0.38</td>
<td>0.23***</td>
<td>0.11</td>
<td>3.39</td>
</tr>
<tr>
<td>Marital relationship → infant abuse</td>
<td>–0.06</td>
<td>–0.12*</td>
<td>0.02</td>
<td>–3.49</td>
</tr>
</tbody>
</table>

Note. CR = Critical Ratio; *p < .05, ***p < .001.
Excessive parenting responsibility may increase parents’ stress level, resulting in a negative marital relationship and abusive incidents (Macfie et al.). Unharmonious relationship between the couple not only affect the rearing attitude of parents and the developmental level of the infant, but also increases the mother's raising burden in a way of mutual circulation. Conflict in a marriage involving a combination of criticism, defensiveness, contempt, and stonewalling has been found to predict divorce or child abuse (Gottman, 1994).

The second hypothesis was that a mother’s depression would have a negative effect on the marital relationship. A depressed mother may be insensitive and unresponsive to the partner because of a feeling of helplessness or inability to be nurturing to the child. The current study results were consistent with the previous study about the depressed wife's maladaptive interactions with her significant others. The perspective study tested that wives who reported experiencing abandonment, rejection, and depressive symptom reported less marital satisfaction (Karney & Bradbury, 1994). Some researchers have attempted to better understand how depression impacts marital quality; they have noted that interpersonal process are commonly noted as factors that may promote and maintain depression (Carnelley, Pietromonaco, & Jaffe, 1994). The depressive mother may receive less social support and maintain less satisfying partner relationships. It is well established that social isolation and loneliness are important factors that weaken the family partnership (Jakupcevic & Ajdukovic, 2011).

The third hypothesis was that infant’s health problem would have a positive effect on infant abuse. The current study results were consistent with that of the previous studies, which found that children can be at a greater risk of maltreatment if they have physical and mental disabilities (Gil, 1996). Additionally, children who have an excessive health problem face increased degree of the maltreatment in all its forms: physical abuse, neglect, and sexual abuse (Sullivan & Knutson, 1998). Infants who test positive for drugs at birth are also at increased risks of abuse, especially if they exhibit withdrawal symptoms such as vomiting, poor feeding, marked tremors, a high-pitched cry, and seizures (National Center on Child Abuse and Neglect, 1994). A recent study (Zhou, Hallisey, & Freymann, 2006) focusing on infant abuse assessment found that a set of perinatal risk factors including birth weight less than 2,500 grams and low 5-minute Apgar scores significantly increases the probability that an infant would be maltreated by caregivers.

The fourth hypothesis for this study was that the mother’s depression would have a positive effect on infant abuse. Depressed mood and fatigue may reduce maternal motivation to undertake safe feeding practices or seek prompt health care for the child. Thus, the mother may perform daily care activity in a hostile rearing environment (Ndokera & MacArthur, 2011). The current study results were consistent with that of a previous study where the relationship between child sexual abuse and depression in adults has been reported (Jakupcevic & Ajdukovic, 2011). The Ontario Mental Health Supplement Study reported that respondents with a parental history of depression, mania, or schizophrenia had 2–3 times higher rate of abuse (Walsh, MacMillan, & Jamieson, 2002). A Korean study (Kim & Kim, 2005) supported assertions about the complex nature of the relationship between family dynamics and abuse. Specifically, the negative impact of family risk factors such as parental mental disorders may increase the likelihood of exposure to child abuse (Kim & Kim). The sensitive mother reacts to an infant’s crying and learns to differentiate among the infant’s various cries, for example, hunger, anger, and pain. However, depressive mothers find it difficult to respond to the basic needs of the infant. Therefore, the infant would experience unmet needs and sometimes neglect and abused.

On the other hand, in a correlation analysis, correlation coefficient between infant health status and marital relationship is –.10. On the other hand, correlation coefficient between infant illness and marital relationship is –.08. Although the value of correlation coefficient is less than 1, it is statistically significant. Considering that the number of subjects was sufficient, analytical attention was needed to test whether there is a practical significance as well as statistical significance. In the future, additional research on the relationship between infant health problem and marital relationship is needed.

**Limitations**

This study has several limitations. First, using panel data in this study, validity of some scales is not reported. Second, the sample of this study consisted only of mothers and their infants. We could not examine the dynamic relationship between fathers and their infants. It is difficult to generalize these results to single parent family or skipped-generation families.

**Conclusions**

Infant's health problem and mother's depression had a negative direct effect on marital relationship, which in turn had a direct negative effect on infant abuse. Infant health problems directly affected infant abuse and also influenced infant abuse indirectly through the marital relationship. Mother's depression had a significant direct effect on infant abuse and also influenced infant abuse indirectly through the marital relationship. The findings from this study demonstrate the fundamental importance of infant health, mother’s mental health, and marital relationships in the prevention of infant abuse and increasing the quality of marital relationship may be the key to infant abuse prevention.

Results from the present study provide some support for preventing infant abuse. First, the marital relationship is critical at the infant stage, this protective factors related to infant abuse must be further identified and established in a therapeutic milieu. To meet mutually supportive family relationship, the parent should be taught to build positive interactions with the child, to recognize and fulfill the child’s needs, and to develop the capacity for containing their anger and feelings of frustration in front of the child and in other close relations (Sherman, Sautter, Jackson, Lyons, & Han, 2006). Community health services should provide supportive services to married couples that may enhance faith, flexibility, humor, communication skills, and problem-solving skills in the

### Table 4 Direct and Indirect Standardized Coefficient for the Final Model Structure.

<table>
<thead>
<tr>
<th>Structural paths</th>
<th>Standardized direct effect(β)</th>
<th>Standardized indirect effect(β)</th>
<th>Standardized total effect</th>
<th>SMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant health problem → marital relationship</td>
<td>−0.14***</td>
<td>−0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal depression → marital relationship</td>
<td>−0.25***</td>
<td>−0.25</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Infant health problem → infant abuse</td>
<td>0.23***</td>
<td>0.02*</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Maternal depression → infant abuse</td>
<td>0.15***</td>
<td>0.03*</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Marital relationship → infant abuse</td>
<td>−0.12</td>
<td>−0.12</td>
<td>0.13</td>
<td></td>
</tr>
</tbody>
</table>

Note. SMC = Squared Multiple Correlation.

*p < .05. ***p < .001.
community. In addition, health personnel should be educated to help the family in crisis on finding social resources and agencies that will help them with their children. When a family shares their concerns and perspectives with their agencies, there is an opportunity to explore solutions and share resources. Because the impact of child abuse is a family problem, not solely a child problem, home visit nurses should always consider the possibility of child abuse within a family when they identify family problems in the home.

Second, health professionals should perform preventive strategies with assessment skills and knowledge about child abuse and the marital relationship. It is important to strengthen community services such as developing a valid test for screening for child abuse and providing educational materials and intervention programs for abused victims.

Conflict of interest
No conflict of interest has been declared by the authors.

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